REMARKS/ARGUMENTS

Claims 1-25 remain in this application. Claims 1, 3, 7, 8, 12, 16, 18, and 22 are currently amended. Claims 23 - 25 are new.

Enablement

The Office Action rejected claims 1-9 and 12-18 under 35 U.S.C. § 112, first paragraph, because, according to the Examiner, the specification does not reasonably provide enablement for what is encompassed by hydrologic controls. (Office Action at 2). The Examiner stated that "[i]n the specification, applicant teaches using only eductors and float valves, hydrologic controls read on elements which have neither been contemplated nor disclosed." *Id.*

Claims 1 and 12 have been amended to clarify that the claimed hydrologic controls are float control valves or eductors. Applicants believe the amendments fully address the Examiner's enablement rejection.

Applicants would like to alert the Examiner that similar language to claims 1 and 12 is used in claims 10 and 19, which were not rejected. If these claims are also rejected for enablement in the future, then Applicants will agree to amend them in the same manner as claims 1 and 12, either in a future amendment or by examiner's amendment.

Rejection of Claims 1-9 and 12-18

The Office Action rejected claims 1-9 and 12-18 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,229,272 to Yates ("Yates '272") in combination with U.S. Patent No. 4,329,215 to Scoville ("Scoville '215").[1] Because the rejection of independent claims

[1]The Examiner stated that Claims 1-9 and 12-18 are rejected as being unpatentable over Yates '272 in combination with Collier, but it appears from the discussion of Scoville '215 on pages 3-4 of the Office Action that the Examiner meant a rejection as being unpatentable over Yates '272

1 and 12 is premised on a common argument, the rejection of these claims will be addressed together.

The Examiner bases the rejection on the combination of certain elements in the Yates '272 and Scoville '215 patents. Yates '272 is directed to a chlorine generator for a swimming pool. (Yates '272, col. 1, lines 18-20). Specifically, the Examiner found that the feed system in Yates '272 includes a housing with a chamber that receives a first reactant and a second reactant. (Office Action at 3). According to the Examiner, the chamber causes a reaction or provides gas-liquid contact to provide a water and chlorine stream which can subsequently be used. *Id.* However, the Examiner admitted that "Yates does not specifically teach applicant's diluent inlet and diluent chamber and eductor." *Id.* In an attempt to remedy this deficiency of the Yates '272 reference, the Office Action cites to Scoville '215.

Applicants respectfully submit that the Office Action has failed to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. MPEP 2143. Second, there must be a reasonable expectation of success. *Id.* Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *Id.* The Applicants respectfully submit that the Examiner has failed to establish the first and third criteria.

A. The Prior Art References Fail to Teach or Suggest All the Claim Limitations

---

in combination with Scoville '215. Applicant therefore responds accordingly.

On page 3 of the Office Action the Examiner, discussing Yates '272, describes a chamber "which receives a first reactant and a second reactant, which specifically includes a flow of water and a flow of gaseous chlorine, the chamber causes reaction and/or provides gas-liquid contact to provide a water and chlorine stream which can be subsequently used." This "chamber" in Yates '272 is the admixing chamber in the gas feed system 60. Chlorine and hydrogen gas flow through conduits 102 and 104 into the gas trap 62 of gas feed system 60. (Yates '272, col. 8, lines 37-45). Water also enters the gas trap 62 via water coupling member 50. (Yates '272, col. 8, line 41). As the gases are introduced into the gas trap region, they are mixed with water. (Yates '272, col. 9, lines 37-40). The water and gas mixture then exits the gas feed system through line 32. (Yates '272, col. 9, lines 37-40).

1. The References Fail to Teach a Reaction Chamber

"To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." MPEP 2143.03. Claims 1 and 12 of the present invention expressly require a reaction chamber. Although the Examiner construes gas feed system 60 as equivalent to the reaction chamber in the invention, Applicants submit that Yates '272 is deficient because it does not have a reaction chamber as required by claims 1 and 12.

The gas feed system 60 in Yates '272 receives water that immediately mixes with the chlorine and hydrogen gas in the gas trap region 62. The gases are mixed with the water and then flow out of the gas feed system (Yates '272, col. 9, lines 37-39), which is why the gas trap region 62 is described as an "admixing chamber for the water and the chlorine." (Yates '272, col. 2, lines 36-54, emphasis added). The admixing chamber in Yates '272 is equivalent to the dilution chamber of the invention, in which the activated solution is diluted with a diluent such as water. There is no

reaction chamber in Yates '272 because the water acts as a transport mechanism to convey the unreacted chlorine gas to the major body of water, or swimming pool. (Yates '272, col. 8, line 67 - col. 9, line 3).

A mixing chamber such as that in Yates '272 is different than the reaction chamber as taught in the Application because the purpose of the reaction chamber in the Application is to allow the two reactants 1-10 minutes of activation time before mixing the activated solution with water. (Application at 2). The admixing chamber in Yates '272 immediately mixes the water and chlorine, thus giving chemicals no time to react with each other before being diluted, if such a reaction is possible. Therefore, Yates '272 fails to teach a reaction chamber.

Scoville '215 fails to remedy this deficiency of Yates '272. The reactants in Scoville '215, chlorine gas and sodium hydroxide, flow in a single line 53 leading to storage tank 14. (Scoville '215, col. 4, lines 10-18). "Chlorine gas rapidly reacts with sodium hydroxide in line 53 to form sodium hypochlorite which is then stored in tank 14." (Scoville '215, col. 4, lines 20-23, emphasis added). Thus, tank 14 stores the final sodium hypochlorite solution, but is not a reaction chamber. No reaction chamber is needed, because the reactants immediately react in line 53. The combination of Yates '272 and Scoville '215 therefore fails to teach a reaction chamber as claimed.

2. The References Fail to Teach Hydrologic Controls for Hydrologically Controlling the Flow of the First and Second Reactants or the Activated Solution

Yates '272 is also deficient because it does not teach hydrologic controls for hydrologically controlling the flow of the first and second reactants or flow of the activated solution, as required by claims 1 and 12, respectively. In Yates '272, the hydrogen and chlorine gases that flow into the gas feed system are mixed with water, as discussed above, but do not react within the gas feed

system 60. Thus they are not reactants, and there is no activated solution. However, even if they were reactants, the gases are not controlled by hydrologic controls that are either float control valves or eductors, as claimed in claim 1. As described in Yates '272, D.C. current is necessary to generate the hydrogen and chlorine gases, which are "naturally aspirated through lines 102 and 104 for transfer to the gas feed system as a result of the pressure built up due to the generation of gases." (Yates '272, col. 8, lines 4-15). The gases are not controlled by any type of valve or eductor, as claimed in claims 1 and 12.

The Examiner has stated that "[t]here are means for controlling the amount of water and chlorine into the chamber. The valving used to control or regulate the flow streams include pivotally mounted to the float operated valves." (Office Action at 3). However, the only float valve in the Yates '272 system, float controlled valve 80, "is provided to regulate the flow of water into the gas feed system." (Yates '272, col. 9, lines 4-6, emphasis added). The purpose of the water flowing through the gas feed system is to mix water and chlorine for injection back into the main body of water. (Yates '272, col. 2, lines 40-42). The float controlled valve 80 therefore regulates the water, a diluent, but does not regulate any reactant. Thus, Yates '272 does not teach the use of float control valves or eductors to control the flow of reactants, as claimed in claim 1, or the flow of an activated solution, as claimed in claim 12.

Applicants submit that Scoville '215 fails to remedy this deficiency in Yates '272. Scoville '215 discloses no valves or eductors in line 53 between the electrolytic unit 13 and the storage tank 14. The only float valves disclosed in Scoville '215 control the flow of soft water into tanks 11 and 12. (Scoville '215, col. 2, lines 58-60). The float valves do not control the flow of the reactants, as

claimed in claim 1, nor do the float valves control the flow of activated solution, as claimed in claim 12.

B. There Is No Suggestion or Motivation to Modify the References or to Combine Reference Teachings.

Not only do Yates '272 and Scoville '215 fail to teach all of the claim limitations, but the Examiner also fails to state a *prima facie* case of obviousness because there is no suggestion or motivation to include a reaction chamber in Yates '272 or Scoville '215. "Although a prior art device 'may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.'" MPEP § 2143.01, (*quoting In re Mills*, 916 F.2d 680, 682, 16 USPQ2d 1430, 1432 (Fed. Cir. 1990)).

Yates '272 discloses no reaction that takes place in the gas feed system 60. Instead, the unreacted chlorine is mixed with the water and then swept back into the swimming pool. Therefore there is no need to have a reaction chamber separate from a dilution chamber, and Yates '272 gives no suggestion or motivation to include one.

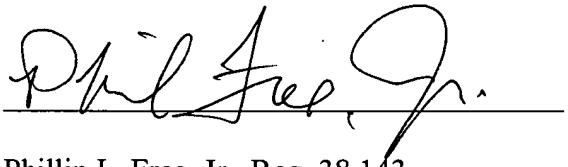
Similarly, there is no motivation to provide a reaction chamber in Scoville '215. The reactants in Scoville '215, chlorine gas and sodium hydroxide, flow in a single line 53 leading to storage tank 14. (Scoville '215, col. 4, lines 10-18). "Chlorine gas rapidly reacts with sodium hydroxide in line 53 to form sodium hypochlorite which is then stored in tank 14." (Scoville '215, col. 4, lines 20-23, emphasis added). As stated above, the reaction chamber in the Application allows the two reactants 1-10 minutes of activation time before diluting the activated solution with water. (Application at 2). Because the chlorine and sodium hydroxide react so rapidly while flowing to the storage tank, no reaction chamber is needed or suggested.

The combination of references cited in the Office Action fail to disclose all elements of the claimed invention. Furthermore, there is no suggestion or motivation to modify the references. As such, the Office Action does not establish a prima facie case of obviousness. Accordingly, Applicants request that the rejection be withdrawn and all pending claims passed to issue.

Conclusion

Applicants believe that the application is now in condition for allowance and request reconsideration and issuance of the application.

Respectfully submitted,

By: 

Phillip L. Free, Jr., Reg. 38,143
David M. Sullivan, Reg. 51,025
Marie S. Johnston, Reg. 56,385
Crowe & Dunlevy, P.C.
20 N. Broadway, Suite 1800
Oklahoma City, Oklahoma 73102-8273
Tel: (405) 235-7700
Fax: (405) 239-6651

Amendments to the Drawings

The attached sheets of drawings include changes to Figs. 8, 9, 10, 11, 12, and 13 and replace the original sheets including these Figures. In Figs. 8-13, there were previously two elements designated by numeral 84. One of these elements, a check valve, has been renumbered as element 85. In Figs. 12 and 13, there were two elements designated by numeral 30. One of these elements, the activated solution, has been renumbered as element 29. Finally, in Fig. 14B, the first text box was changed to read, in part, "(SEE FIGURE NO. 10)."

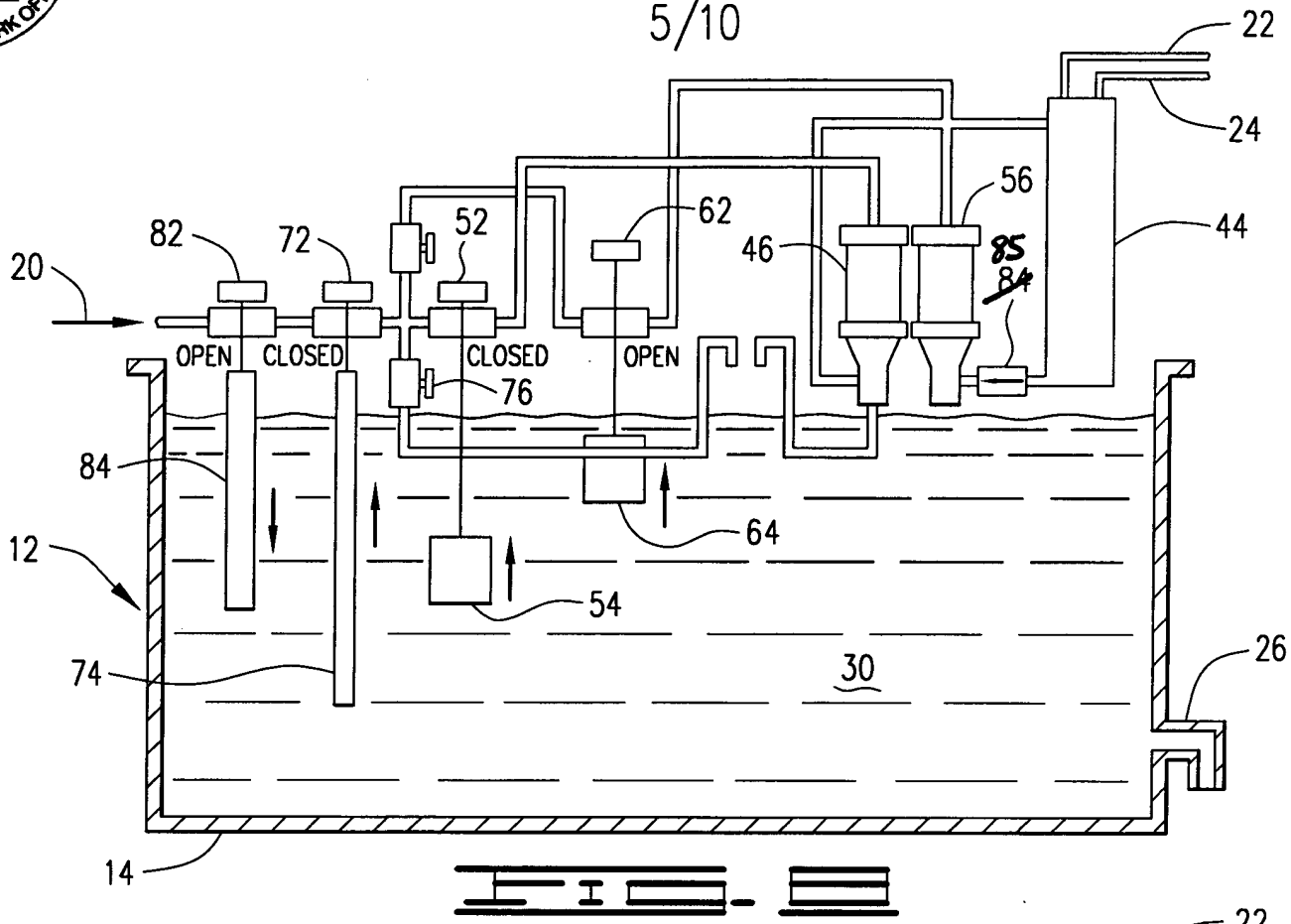
Attachment: Replacement Sheets

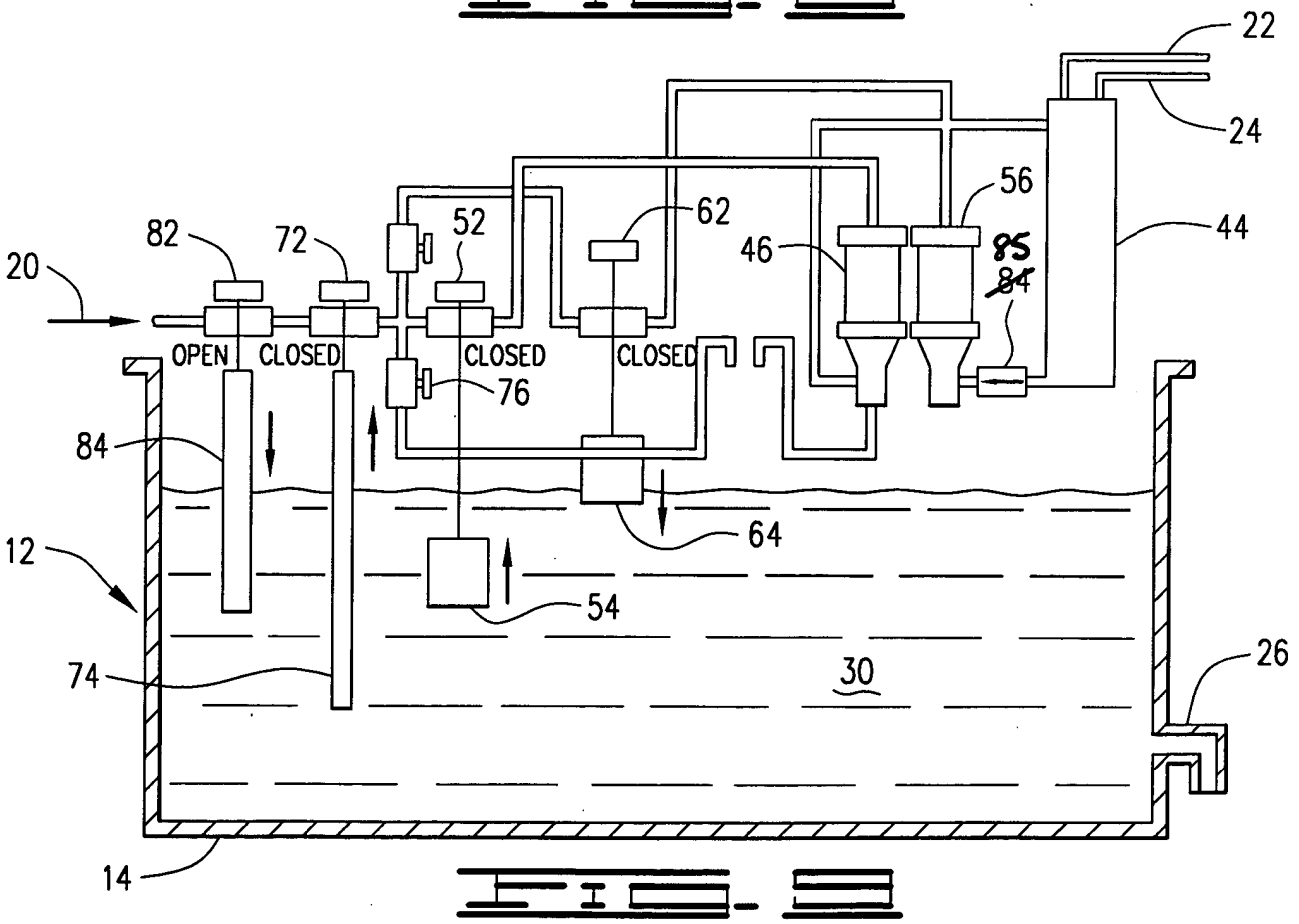
Annotated Sheets Showing Changes

APPENDIX

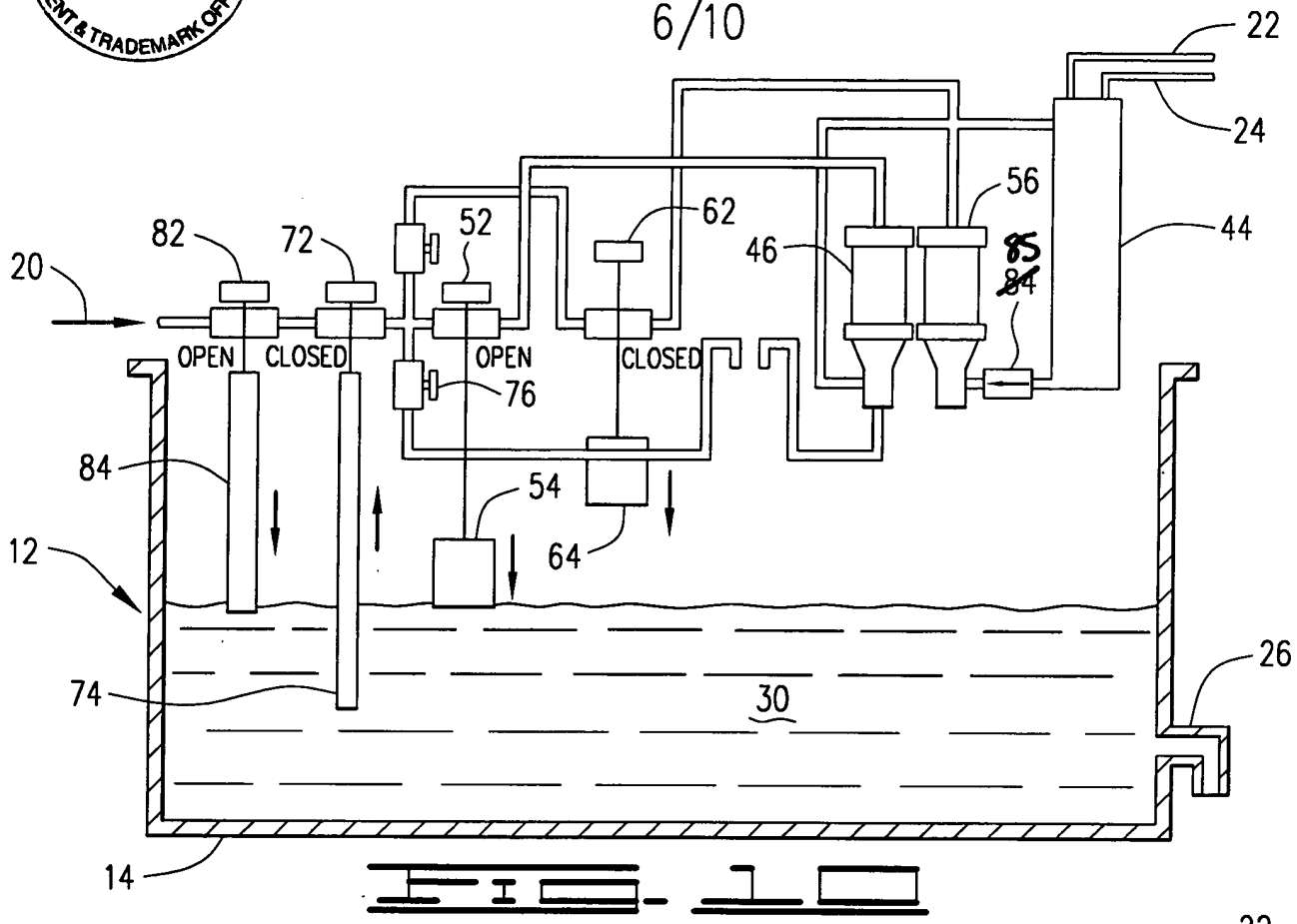
ANNOTATED SHEETS/ REPLACEMENT SHEETS FIGS. 8–13, 14B

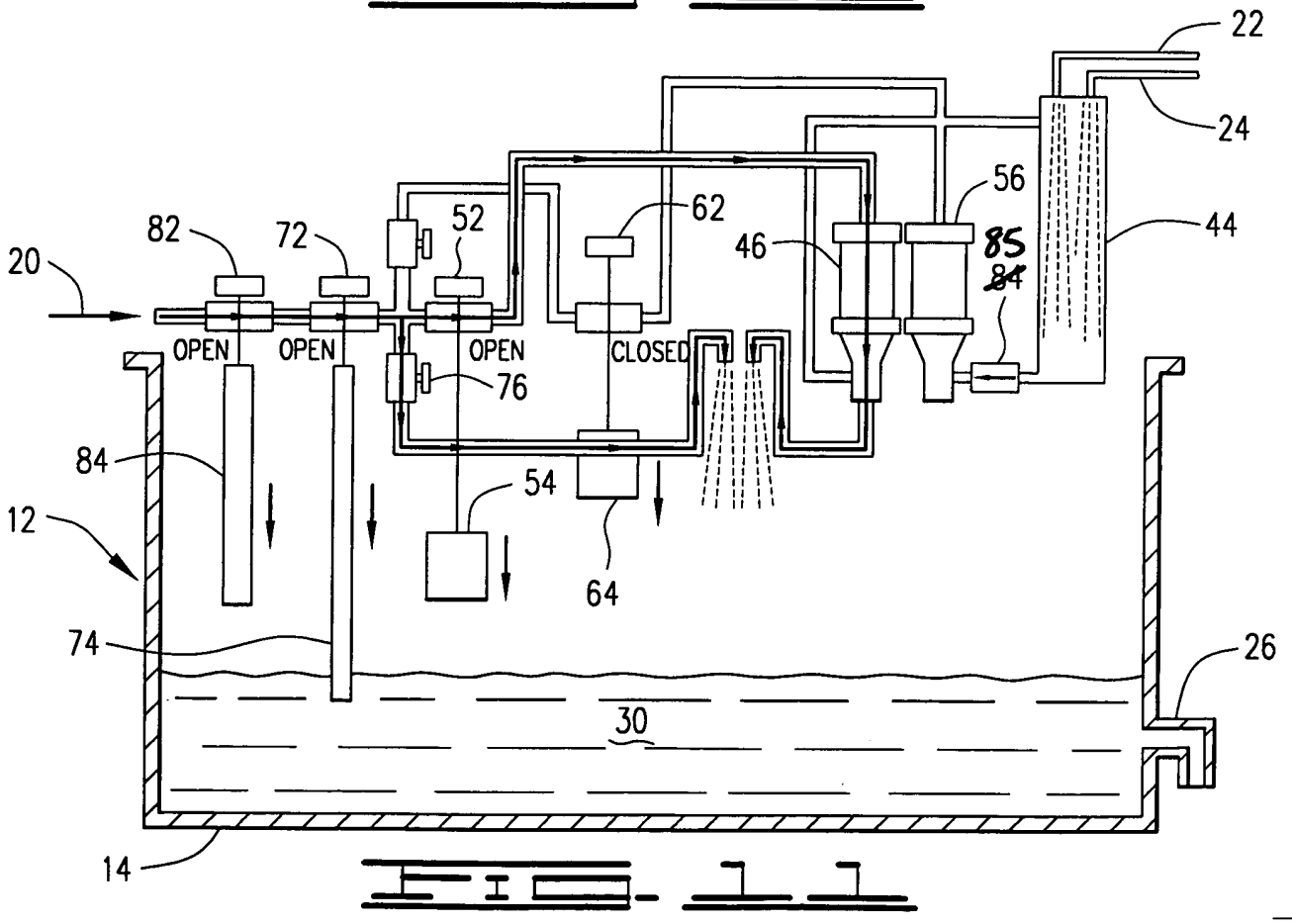
<<ANNOTATED MARK-UP DRAWING>>
U.S. Patent Appln No.: 09/607,225 Inventor: Hunt, et al.
Title: Chemical Generator using Hydro-Logic System Filing Date: 06/30/00
Docket No.: P1045US01 Express Mail No.: EL638311919US Sheet 5/10

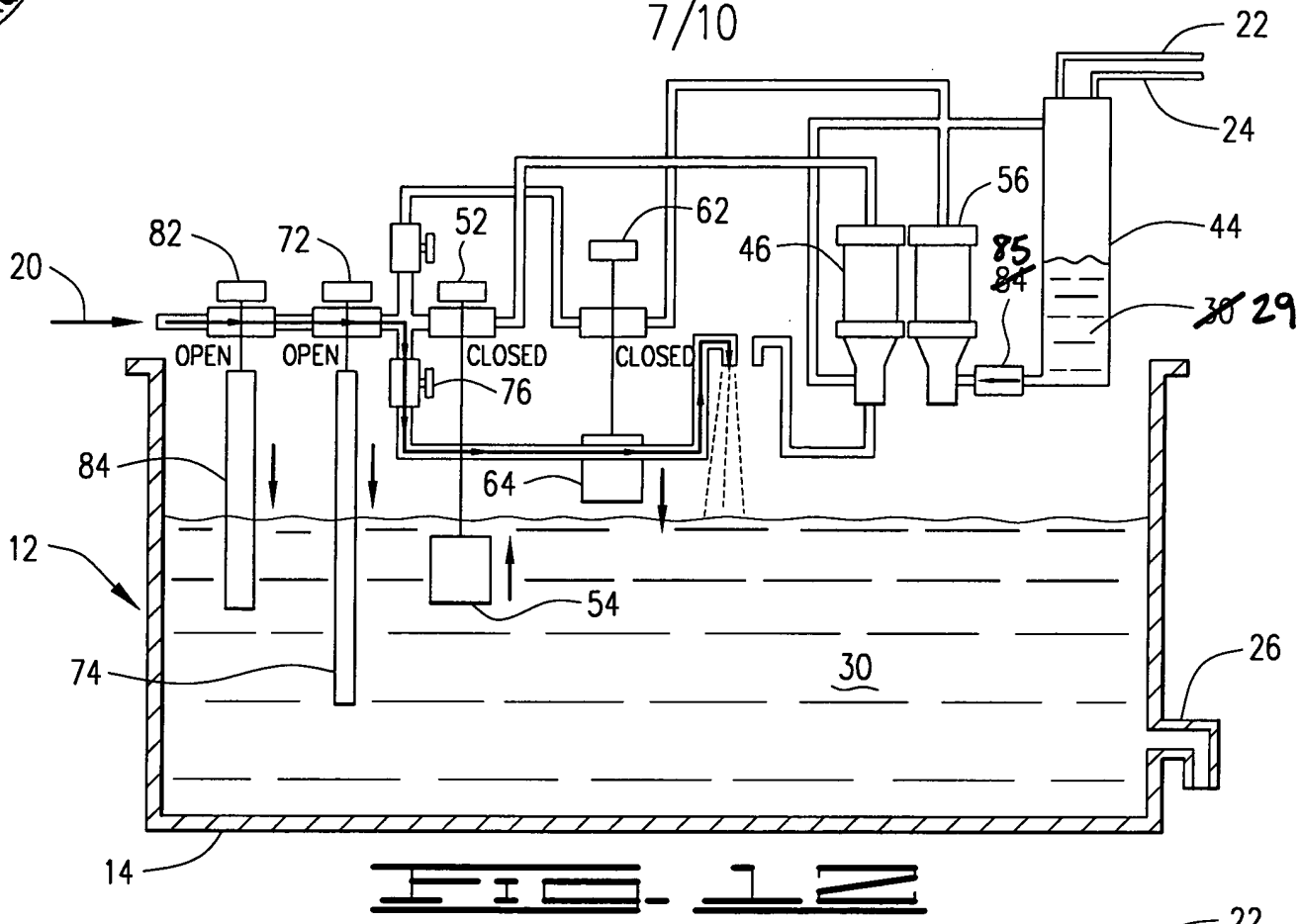




<<ANNOTATED MARK-UP DRAWING>>
U.S. Patent Appln No.: 09/607,225 Inventor: Hunt, et al.
Title: Chemical Generator using Hydro-Logic System Filing Date: 06/30/00
Docket No.: P1045US01 Express Mail No.: EL638311919US Sheet 6/10







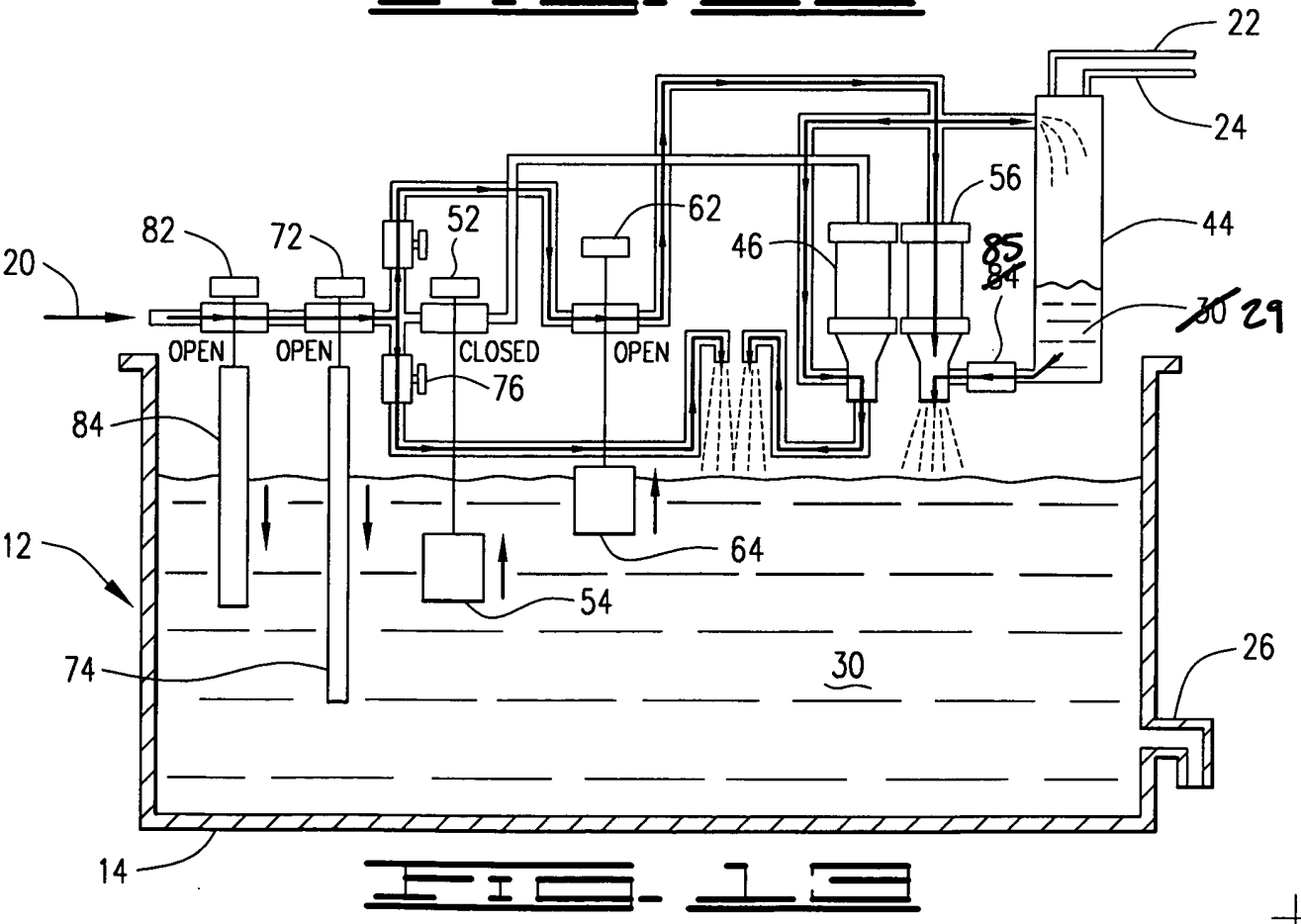


FIG. 14A

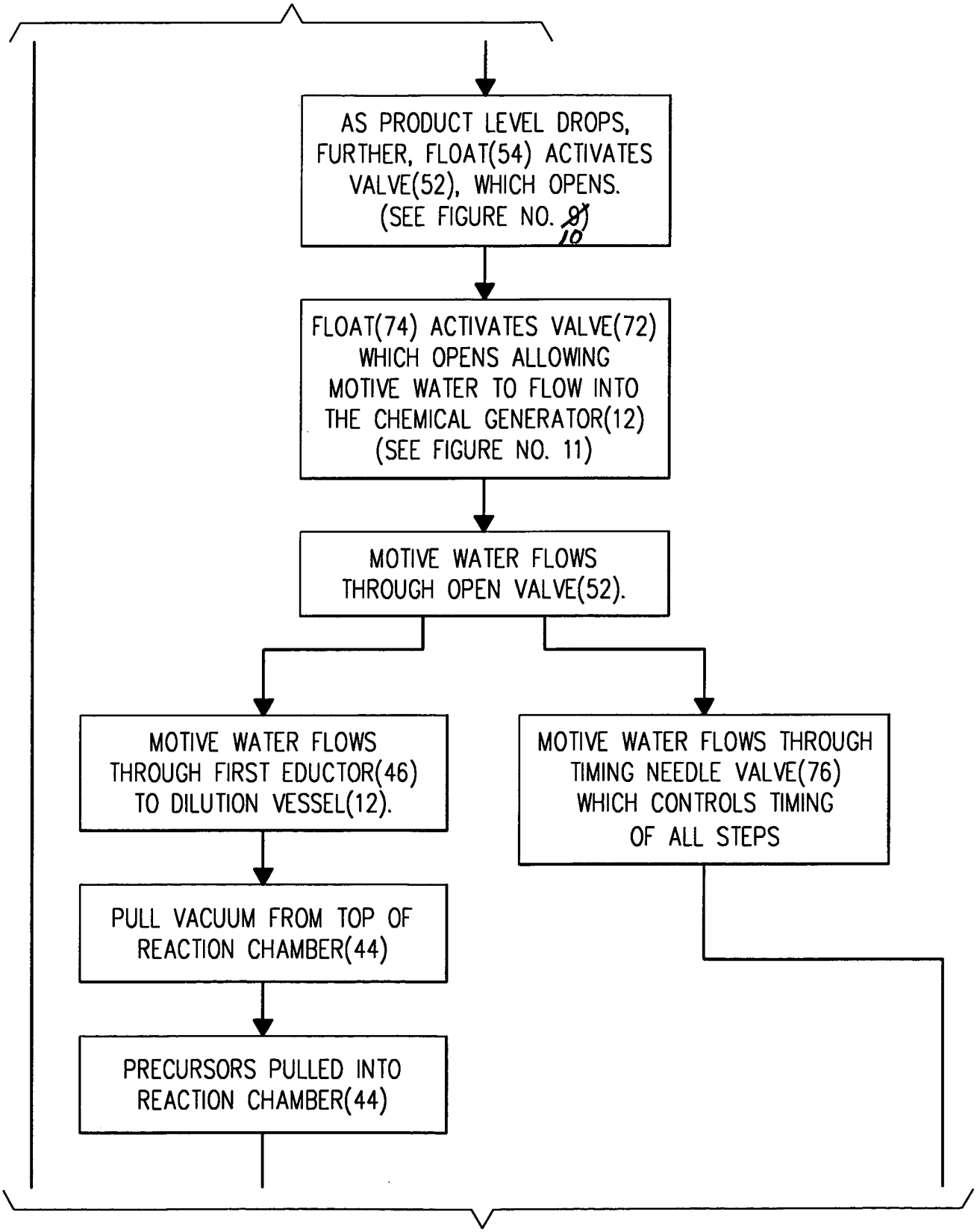


FIG. 14C

FIG. 14B